

WHAT IS CLAIMED IS:

1. An electron beam apparatus comprising an electron source having electron beam emitting devices, an electrode for controlling electrons emitted from said electron source and members arranged between said electron source and said electrode, wherein  
5 said members have:  
a high resistance film formed on the surface; and  
at least a low resistance layer formed on the side  
10 facing said electrode or said electron source;  
said high resistance film being electrically  
connected to either said electrode or said electron  
source by way of said low resistance layer, said low  
resistance layer being covered at least partly by said  
15 high resistance film.
2. An electron beam apparatus according to claim 1, wherein said low resistance layer is covered by said high resistance film in a boundary area held in  
20 connection with said high resistance film.
3. An electron beam apparatus according to claim 1, wherein said low resistance layer is covered by said high resistance film in an area exposed to ambient air.  
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4. An electron beam apparatus according to claim

1, wherein said low resistance layer is entirely covered by said high resistance film.

5        5. An electron beam apparatus according to claim 1, wherein said members have said low resistance layer and said high resistance film sequentially formed in the mentioned order.

10       6. An electron beam apparatus according to claim 1, wherein said low resistance layer is arranged on the end face of said members facing either said electrode or said electron source and extending to the lateral sides thereof and the extended portion of said low resistance layer is covered by said high resistance film at least at the extreme ends thereof.

20       7. An electron beam apparatus according to claim 1, wherein said high resistance film may be arranged to cover said low resistance layer at least on the end face facing said electrode or said electron source.

25       8. An electron beam apparatus according to claim 1, wherein said low resistance layer is covered by said high resistance film at least in part of the area exposed to ambient air.

9. An electron beam apparatus according to claim

1, wherein said electron source has a plurality of electron-emitting devices connected by wires and said members are electrically connected to said wires.

5           10. An electron beam apparatus according to claim 1, wherein said electron source has a plurality of electron-emitting devices connected to form a matrix-wiring arrangement by means of a plurality of row-directional wires and a plurality of  
10 column-directional wires electrically insulated from said plurality of row-directional wires.

          11. An electron beam apparatus according to claim 1, wherein said electrode is an acceleration electrode  
15 for accelerating electrons emitted from said electron source.

          12. An electron beam apparatus according to claim 1, wherein said electron-emitting devices are surface  
20 conduction electron-emitting devices.

          13. An electron beam apparatus according to claim 1, wherein said members are spacers.

25           14. An electron beam apparatus according to claim 1, wherein said electron source has a plurality of electron-emitting devices.

15. An electron beam apparatus comprising an  
electron source having electron beam emitting devices,  
an electrode separated from said electron source and  
members arranged between said electron source and said  
5 electrode, wherein

said members include:

a film arranged on the surface and adapted to  
allow a minute electric current to flow therethrough;  
and

10 an end electrode arranged at least at the end  
facing said electron source or said electrode, said  
film covering at least part of said end electrode.

16. An electron beam apparatus according to claim  
15, wherein said end electrode is covered by said film  
at least in the area connected to said film.

17. An electron beam apparatus according to claim  
15, wherein said end electrode is covered by said film  
20 in an area exposed to ambient air.

18. An electron beam apparatus according to claim  
15, wherein said end electrode is covered by said film  
in part of an area exposed to ambient air.

25 19. An electron beam apparatus according to claim  
15, wherein said end electrode is entirely covered by

said film.

20. An electron beam apparatus according to claim  
15, wherein said members have said end electrode and  
5 said film sequentially formed in the mentioned order.

21. An electron beam apparatus according to claim  
15, wherein said end electrode is arranged on the end  
face of said members facing either said electrode or  
10 said electron source and extending to the lateral sides  
thereof and the extended portion of said end electrode  
is covered by said film at least at the extreme ends  
thereof.

15 22. An electron beam apparatus according to claim  
15, wherein said film is arranged to cover said end  
electrode at least on the end face facing said  
electrode or said electron source.

20 23. An electron beam apparatus according to claim  
15, wherein said electron source has a plurality of  
electron-emitting devices connected by wires and said  
members are electrically connected to said wires.

25 24. An electron beam apparatus according to claim  
15, wherein said electron source has a plurality of  
electron-emitting devices connected to form a matrix-

wiring arrangement by means of a plurality of  
row-directional wires and a plurality of  
column-directional wires electrically insulated from  
said plurality of row-directional wires.

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25. An electron beam apparatus according to claim  
15, wherein said electrode is an acceleration electrode  
for accelerating electrons emitted from said electron  
source.

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26. An electron beam apparatus according to claim  
15, wherein said electron-emitting devices are surface  
conduction electron-emitting devices.

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27. An electron beam apparatus according to claim  
15, wherein said members are spacers.

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28. An electron beam apparatus according to claim  
15, wherein said electron source has a plurality of  
electron-emitting devices.

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29. An image-forming apparatus comprising an  
electron beam apparatus according to claim 1, wherein  
an image is formed by irradiating a target with  
electrons emitted from said electron-emitting devices.

30. An image-forming apparatus according to claim

29, wherein said target comprises fluorescent bodies.

31. An image-forming apparatus comprising an  
electron beam apparatus according to claim 24, wherein  
5 an image is formed by irradiating a target with  
electrons emitted from said electron-emitting devices.

32. An image-forming apparatus according to claim  
31, wherein said target comprises fluorescent bodies.  
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33. A method of manufacturing a member to be used  
in an electron beam apparatus having an electron source  
and an electrode separated from said electron source,  
said member being adapted to be arranged between said  
15 electron source and said electrode, said member having  
a low resistance layer arranged at least on the side  
facing said electrode or said electron source and a  
high resistance film electrically connected to the low  
resistance layer, said method comprising:

20 a step of forming said high resistance film to  
cover at least part of said low resistance layer.

34. A method of manufacturing a member according  
to claim 33, wherein, in the step of forming said high  
25 resistance film, said high resistance film is formed on  
said low resistance layer at least on the side facing  
said electrode or said electron source of the member

and, at the same time, on the sides other than the side facing said electron source or said electrode to facilitate the manufacture of the member.

5           35. A method of manufacturing a member to be used  
in an electron beam apparatus having an electron source  
and an electrode separated from said electron source,  
said member being adapted to be arranged between said  
electron source and said electrode, said member having  
10 an end electrode arranged at least on the side facing  
said electron source or said electrode and a film  
electrically connected to the end electrode, said  
method comprising:

15           a step of forming said film to cover at least part  
of said end electrode.

20           36. A method of manufacturing a member according  
to claim 35, wherein, in the step of forming said film,  
said film is formed at least on the side facing said  
electron source or said electrode and, at the same  
time, on the sides other than the side facing said  
electron source or said electrode to facilitate the  
manufacture of the member.